PUBLIC HEALTH REPORTS.

UNITED STATES.

[Reports to the Surgeon-General, Public Health and Marine-Hospital Service.]

THE CLIMATE OF NEW MEXICO.

By Surgeon PAUL M. CARRINGTON, *Fort Stanton, N. Mex.*

Many inquiries are received from physicians and others concerning the climatic and other conditions in New Mexico, and there being no single publication of moderate dimensions covering all the points upon which information is asked, it is considered desirable to collect and publish in a convenient and condensed form authentic observations on the subject, to meet the demands for information above referred to.

New Mexico alone is treated of in this article, because the conditions prevailing in New Mexico are in a large measure typical of the entire region of the "arid Southwest."

GEOGRAPHY.

Geographically New Mexico lies south of Colorado, east of Arizona, west of Texas and north of Texas and Mexico. It extends from the thirty-seventh to the thirty-second degree of north latitude, its southwestern corner extending as far south as about 31.3 degrees. The one hundred and third meridian west of Greenwich forms its eastern border and the one hundred and ninth its western border. New Mexico is a portion of that region known as the "arid Southwest," which is composed of Colorado, western Texas, New Mexico, Arizona, and southern California. The climatic conditions prevailing in this entire section possess the same general characteristics, although in various degrees, as modified by latitude, altitude, and topography.

TOPOGRAPHY.

Generally speaking New Mexico is mountainous, with here and there elevated table-lands. The mountains are portions of the Rocky Mountain Range and extend in a general northerly and southerly direction from its most northern to its extreme southern boundary. The mountains and foothills extend to its most eastern border on the north, and its plains and low altitudes are found in the southeastern corner, but even here the altitude exceeds 3,000 feet above sea level. The mountains of greatest altitude are found in northwest and south central New Mexico; the Truchas peaks in Santa Fe County are the highest in the Territory, rising to an altitude of 13,275, 13,140, and 13,060 feet,

respectively. Here and there in various portions of the Territory are to be found numerous mountain valleys varying in width from a few hundred yards to several miles, and surrounded on all sides by high mountains, and in many instances traversed by beautiful streams of cold, clear, pure water, which have their origin in the surrounding mountains. The tendency of these streams is to sink into the ground upon reaching the plateaus. The mountainous and hilly character of New Mexico has a most important bearing on its climatic conditions. No portion of the Territory of New Mexico has an altitude of less than 3,000 feet and the greater portion of it is more than 5,000 feet. The altitude also modifies very materially its climatic conditions, especially with regard to temperature.

CLIMATE.

(*a*) Climate has been defined to be the conditions of a place in relation to the various phenomena, as temperature, moisture, etc., especially as they affect animal and vegetable life.

(*b*) The sum of atmospheric conditions as recorded for a long period of time; or, in other words, it is the totality of weather, while weather is the physical condition of the atmosphere at a given or during a limited period.

The climate of a place is ascertained by a study of its continuous weather records for a long period of years; the atmospheric pressure, the temperature, the rainfall, the snowfall, the time and frequency of frosts, the extremes of heat and cold, the direction and velocity of the wind, the amount of air that flows from different points of the compass, the amount and intensity of sunshine, the humidity and transparency of the atmosphere and its electrification. (Prof. Willis L. Moore.)

Professor Moore also says:

Climate affects the health, happiness, and well-being of people more than any other condition that goes to make up their environments. Within the broad confines of the United States there are many, but not all, shades and varieties of climate. One of the questions most frequently asked is: "Where shall I find a climate possessing both dryness and equability of temperature?" To this interrogatory, reply must be made that the ideal climate as regards equability of temperature and absence of moisture does not exist in the United States, but that the nearest approach to it will be found in the great Southwest.

The temperature of the Southwest is not equable in the sense of having an extremely small daily range, but it possesses the quality of annual uniformity in a greater degree than will generally be found elsewhere except on the seacoast, and there the humidity is great.

The above statement should be convincing as to the climate of the great Southwest, as the conclusions were based upon a long period of scientific observations.

The climatic conditions prevailing in New Mexico are practically the same in general features as are to be found in the entire region included under the term "arid Southwest," the difference being in degree rather than kind. In general terms it may be said that the climate of this region is characterized by a large percentage of possible sunshine, a low degree of relative humidity with low temperatures at night, and a low percentage of soil moisture, these conditions being modified to a greater or less extent by the topography of the particular locality under consideration, as well as by its altitude and latitude. Much more than half the yearly rain falls in July and August, usually in the afternoon, when it is most needed by growing vegetation and for cooling the atmosphere. Average temperatures for the arid Southwest in general, even for the Territory of New Mexico, would be

valueless, because of the wide difference between north and south New Mexico. There is a difference of more than 5 degrees latitude, which alone would have considerable influence on the temperature of the northern portion as compared with the southern. There is also the effect of altitude, as well as the topography, to be taken into consideration. There is usually throughout this region a very considerable daily range of temperature, amounting to as much at times as 50 or 60 degrees, and averaging about 30 to 40 degrees. The low temperatures occur at night, and therefore do not detract from the attractiveness of the climate as a whole, even in the winter, while in summer the low night temperatures make it possible to sleep in comfort, and in most localities the use of blankets at night is necessary for comfort, even in summer. Even during the hottest days in summer, when the thermometer frequently registers from 80 to 90 degrees, and in some localities even more, the heat is never oppressive on account of the low relative humidity, and sunstroke, so common in the cities of the East, is practically unknown in the arid Southwest. On the other hand, the coldest days in winter are comfortable if the sun be shining, and it usually does shine. Overcoats are rarely worn on sunshiny days, and it is a common occurrence at the Fort Stanton Sanatorium to see patients during midwinter lounging or playing croquet in their shirt sleeves, with the thermometer showing a temperature of from 30 to 50 degrees F. That feature of the climate of New Mexico which detracts more than any other from its general excellence is the occurrence of high winds in the late winter or early spring months. These winds prevail with variable frequency during the season mentioned throughout the Territory, being more severe in the less mountainous regions. They are also referred to as "sand or dust storms." Their direction is usually from the west, southwest, or northwest, and they frequently prevail from two to three days at a time. After the wind has been blowing from twelve to twenty-four hours a greater or less quantity of fine dust becomes apparent and is extremely annoying. The amount of dust is governed not only by the topography of the locality—the wind and dust both being less severe in localities protected by high mountains than on the plateaus—but also by the amount of rain and snow fall in the preceding months. During the past four years the rain and snow fall have been above the normal and during these years windstorms have been very rare, with scarcely any dust at all. During the years from 1901 to 1903, inclusive, when the entire precipitation was less than 10 inches at Fort Stanton, and generally low throughout the Territory, "three-day" windstorms prevailed at frequent intervals throughout February, March, and April. The velocity of the wind during these storms is from 30 to 50 miles. The wind usually blows steadily, reaching its maximum intensity within a few hours, and continues with the exception of a lull about sundown for the usual period of three full days. Such storms have an undoubted effect upon the nervous system of patients.

The second objectionable feature of the New Mexico climate is a wind which blows occasionally during the winter and spring months from the east or southeast, and which, like the wind just treated of, usually lasts two or three days. After the first fifteen to twenty hours clouds appear, and if the wind continues there is usually fog, rain, or snow, according to the season. These storms very rarely continue for more than three days at a time, but in a residence of

more than six years in New Mexico I have seen one period of east winds with alternating fog, rain, and snow which prevailed for sixteen days, with two intervals of one day each during which the sun shone beautifully.

Allowing for these two winds the climate of New Mexico is very nearly perfect. It is true that very low temperatures are present at times and in some localities, as the Pecos Valley, where the north wind has a long sweep. Occasional blizzards occur, but the low temperatures almost always occur at night, and at such times the days are sunshiny and the atmosphere is dry, making life a delight.

These few objectionable features have been included with the excellencies of the climate in an effort to be perfectly fair and avoid disappointing those who come to New Mexico expecting to find it literally a land of perpetual sunshine and balmy breezes.

To put it otherwise, while the climate is always superb, there is occasionally bad weather, and no amount of description, no multitude of statistical tables can give an adequate idea of the delightful, invigorating climate of New Mexico, which must be experienced to be fully appreciated. The warm, sunny days of winter, no less than the cool and shady days of summer, invite the invalid and the robust to the outdoor life.

I have perhaps conveyed an erroneous impression regarding the frequency of the so-called three-day winds. As a matter of fact the typical storm described is rather rare—more frequently the wind ceases after blowing from twelve to forty-eight hours.

SOIL, MOISTURE, AND EVAPORATION.

The effect of soil moisture upon the health of a locality is well recognized, and a low percentage always makes for salubrity of climate. The study of soil moisture undertaken by Professor Weinziri and others at the Hadley Climatological Laboratory of the University of New Mexico, at Albuquerque, shows the following results:

Moisture content of soil.

Date.	Place.	Character of soil.	Depth.	Moisture.
			Inches.	*Per cent.*
Dec. 28, 1899	River bottoms	Sandy	8	30.9
Do	Highlands	do	8	1.9
Do	Mesa	Clay	8	3.9
Dec. 10, 1901	do	do	4	8.5
Do	do	do	10	10.2
Do	do	do	36	4.6
May 2, 1902	do	do	4	5.4
Do	do	do	10	7.2
Do	do	do	36	4.8

From this table it will be seen that aside from the sandy river bottom, where the moisture was 30.9 per cent at a depth of 8 inches, the highest percentage was 10.2, which, when compared with the ordinary percentage found in arable land of from 20 to 40 per cent, shows the soil of New Mexico to be very dry indeed. Even the heavy summer rains penetrate the ground only 12 or 15 inches at most, and this moisture is quickly returned to the atmosphere by evaporation.

The annual evaporation of water at Albuquerque showed the evaporation to be something more than 80 inches as against about 40 inches

at Boston. A tank 2 feet square by 1 foot deep, made of wood and lined with heavy zinc sheeting, was used in these observations.

These tests were also conducted at the Hadley Laboratory, the purpose being to determine in a practical way the dryness of the New Mexico climate.

LOCALITIES.

The following places have been selected as fair examples of the various portions of the Territory of New Mexico: Alamogordo, Albuquerque, Carlsbad, Deming, Fort Bayard, Fort Stanton, Las Cruces, Las Vegas, Roswell, and Santa Fe. These localities vary in altitude from 3,122 feet at Carlsbad to 7,013 feet at Santa Fe. Some are located in close proximity to the mountains and others on the plains. The list might be enlarged very greatly, but the number given is sufficient to illustrate very well the various climatic conditions to be found within the borders of New Mexico.

ALAMOGORDO.

Alamogordo, in Otero County, elevation 4,500 feet, is located on the main line of the El Paso and Rock Island route, 86 miles north of El Paso and only a few miles west of the foothills of the Sacramento Mountains, which rise to an elevation of about 9,000 feet. It is a town of about 4,000 inhabitants, electrically lighted, and supplied with an abundance of pure water, which is piped from springs in the mountains about 14 miles distant. This town less than ten years ago was a desert, but since the advent of the railroad and by means of irrigation great numbers of shade and fruit trees have been grown, and it is now one of the most attractive towns in the south central portion of New Mexico. A large sanatorium is now in course of erection just out of the town toward the mountains. One very desirable feature of this locality is the availability of any desired altitude, from a little over 4,000 feet to as much as 9,000 feet, within a few miles. The mountains afford protection from the severe winds, and while the summers are warm—the temperature having reached as high as 109 degrees during the past five years—the winters are very delightful. The lowest temperature recorded for the same period has been 8 degrees above zero. The greatest number of cloudy days recorded in any one year since 1902 was 27, and the number of absolutely clear days has ranged well above 225. One hundred and nine seems in figures a very high temperature, but when the absence of humidity is remembered it will be easily understood that such a temperature is by no means attended with any considerable discomfort. For the same reasons comparatively low temperature are experienced without suffering. The minimum temperature occurs about 3 or 4 o'clock, a. m., and the temperature will rise quickly 20 or 30 degrees, or even more, shortly after sunrise. The average precipitation, except during the past two years, was about 8 inches, and while I have no exact data as to humidity it is unquestionably very low.

ALBUQUERQUE.

Albuquerque, in Bernalillo County, central New Mexico, is the most considerable town in the Territory. It is situated on the main line of the Santa Fe Railway, in the Rio Grande Valley, at an altitude of 5,200 feet. The valley of the Rio Grande at Albuquerque is quite

wide and the town has therefore less protection from the wind than some others, although the Weather Bureau does not furnish actual observations on this point. It has long enjoyed an enviable reputation as a resort favorable to consumptives. Malarial fever prevails to some extent in parts of the town lying in close proximity to the river. The population is perhaps 15,000, and there are such modern conveniences as street cars, electric lights, waterworks, gas, and sewers. The annual rainfall is between 7 and 8 inches and the mean annual temperature is 55.7. Within 25 miles there are the mountain resorts of Whitcomb Springs, Coyote Springs, and Devil Canyon, the last being a popular camping ground.

CARLSBAD.

Carlsbad, a growing and prosperous town in the Pecos Valley, has an altitude of 3,122 feet. All this region is developing rapidly, mainly by reason of the excellent supply of artesian water, which is extensively used for irrigation. The winters are warm and pleasant, the mean minimum temperature of 43 degrees occurring in December and January, while the mean annual temperature is 63 degrees. The mean annual precipitation is about 12 inches. The climate of Carlsbad, while excellent in winter, is rather too warm for consumptives in summer. Carlsbad is on the Pecos Valley and Northeastern Railroad, a branch of the Santa Fe system, and derives its name from springs having essentially the same mineral constituents as the celebrated German springs of that name.

DEMING.

The town of Deming, in southwestern New Mexico, is one of the moderately high altitude locations, and is situated on a plateau about 40 or 50 miles in area, west of the Rio Grande Valley, and is the junction of the Southern Pacific and Santa Fe railroads. Its altitude is 4,331 feet, the mean temperature, arrived at from a period of twelve years' observations, is 70.2, and the annual rainfall 8.79 inches. Deming has a very favorable winter climate for tuberculous patients, and its water supply has long been famous. The principal hotels and restaurants in El Paso, Tex., until recently offered the use of Deming water as an attraction. Owing to the situation of Deming, on a plateau with the surrounding mountains 20 miles distant, the prevalence of winds and sand storms during the spring months is to be expected, but as a winter resort for consumptives its reputation is well deserved.

FORT STANTON.

The reservation of Fort Stanton embraces nearly 45 square miles, through the center of which, from west to east, flows the Rio Bonito. The buildings are located on the south bank of the Bonito, almost exactly in the center of the reservation, at an altitude of 6,231 feet. Five miles to the east are the Capitan Mountains, between 9,000 and 10,000 feet above sea level, while to the west rise the foothills of the White Mountains, culminating in White Mountain peak, which has an altitude of 11,976.5 feet above sea level. On the north and south the sanatorium buildings are sheltered at a distance of about one-half mile by hills, which rise from 300 to 600 feet above the level of the parade

ground, around which the buildings are clustered, so that the sanatorium proper is very much protected against high winds and sand storms. This protection by the surrounding hills is very noticeable when on a windy day one rides across the hills to the neighboring towns.

The Rio Bonito furnishes the station with an ample supply of very excellent water, both for domestic purposes and irrigation, during the greater portion of the year. When the river supply fails, water of good quality and very soft is pumped from deep wells.

The average number of clear days annually is 173, partly cloudy 140, and cloudy 52, using the nomenclature of the Weather Bureau. Precipitation occurs on an average of 70 days in a year and the annual precipitation is about 17 inches. The average relative humidity is 53 per cent, the mean maximum temperature 65 degrees, the mean minimum 38 degrees, and the annual mean 52 degrees. The highest temperature recorded during a period of twenty-eight years was 95 degrees, and the lowest recorded during the same length of time was −18, which occurred on December 22, 1887. The average hourly wind velocity is 6.6 miles and the highest velocity ever recorded was 63 miles, which occurred during the month of May. The average annual snowfall is 22.3 inches, which is included in the total average precipitation. The average date of killing frost in spring is May 6 and the average date in the autumn October 5. These statistics are taken from the records made during the occupancy of Fort Stanton as an army post. My own observations during the past six years indicate a larger number of clear and fewer cloudy days, as well as rather less precipitation, but as these observations were made by an amateur and cover a shorter period they are probably less reliable than those supplied by the Weather Bureau. The occurrence of temperature below zero is very rare, and equally rare is the maximum summer temperature.

Fort Stanton is not a town, but solely a Government sanatorium maintained for the reception of tuberculous patients who are beneficiaries of the Public Health and Marine-Hospital Service, but about 10 miles distant is the quaint old town of Lincoln, the county seat of Lincoln County, having a population of about 700 people. Here one of my former assistants, himself a recovered consumptive, has located on a fruit farm, where he has established a private sanatorium and has an increasing number of patients whose favorable progress is most gratifying.

FORT BAYARD.

Fort Bayard, in southwestern New Mexico, is too well known as the location of the Army General Hospital for the treatment of tuberculosis to require more than passing notice. It is situated about 9 miles from Silver City at an altitude of about 6,100 feet. The climate of Fort Bayard is practically the same as that of Fort Stanton; the temperature is slightly higher, while the winds and other climatic data register about the same. Silver City profits by the advertisement of the proximity of Fort Bayard, and has established two or three sanatoria for the treatment of consumptives. The town of Silver City has a population of 4,000 or 5,000, is reached by a branch of the Santa Fe Railroad, and is located in the midst of an active mining country. It is a growing and attractive place.

Fort Bayard is not open to the general public, being maintained exclusively for the reception of tuberculous officers and men of the Army, but there are three sanatoria maintained in the neighboring town of Silver City, where the climatic conditions are the same as at Fort Bayard.

LAS CRUCES.

Las Cruces, Donna Ana County, in southern New Mexico, is located on the main line of the Santa Fe Railway, in the Mesilla Valley, a name given that portion of the Rio Grande Valley extending from the Selden Mountains on the north to within a few miles of El Paso, Tex., where the river flows through a range of mountains. The entire length of the Mesilla Valley is about 50 miles and the average width about 5. The Organ Mountains, about 10 miles east of Las Cruces, rise to an altitude of from 7,000 to 9,000 feet above sea level. The observations for Las Cruces are taken at Mesilla Park, about 2½ miles southeast of the town, this being the location of the experiment station as well as of one of the Territorial colleges. Its altitude is 3,868 feet. The mean maximum temperature is 76.8, the mean minimum 41.4, while the annual mean is 61.6. The highest recorded temperature is 106 and the lowest 1 degree below zero. The average annual precipitation is slightly under 9 inches, and the mean annual relative humidity is 51 per cent. The average number of clear days is 225, partly cloudy 91, and cloudy 49. The mean annual average wind movement is 6.7 miles per hour. Owing to the considerable distance of this valley from the mountains on the west the windstorms in spring are of greater frequency and severity than in the more mountainous parts of the Territory. Winds reaching a velocity of 75 miles per hour have been recorded, but, as in other portions of New Mexico, storms of a cyclonic nature are unknown. The prevailing direction of nearly all the high winds is from the west, and such winds usually carry considerable quantities of sand and dust. There are occasional high winds from the south, which, when they prevail for two or three days, are usually accompanied by cloudiness and often rain. Las Cruces and Mesilla Valley have a delightful winter climate, and it is chiefly during this season that they are especially adapted to the needs of the consumptive.

LAS VEGAS.

Las Vegas, San Miguel County, north central New Mexico, about 45 miles east and 10 miles south of Santa Fe, is one of the most beautiful and attractive cities of New Mexico. It is located on Gallinas Creek in a rolling, hilly country at the base of the Gallinas Mountains, and is on the main line of the Santa Fe Railway. Its altitude is 6,384 feet. A few miles higher up the valley from Las Vegas are the celebrated Gallinas Hot Springs. On the west and northwest the mountains rise to an altitude of 9,500 feet and afford protection from the prevailing winds. Las Vegas has an excellent water supply, good natural drainage, and all the modern municipal conveniences. Its refined social life and the natural beauty of the surrounding country, as well as its superior climate, attract many tourists and invalids.

The number of clear days annually is very large, 227 being the average; partly cloudy, 115; and cloudy, only 23. Precipitation

occurs on an average of 67 days, with an annual average of about 19 inches and a relative humidity of only 50 per cent. The mean maximum temperature is 65 degrees, the mean minimum 36, and the annual mean 50. The highest temperature recorded for a period of nineteen years was 98 degrees in June, 1902, and the lowest 31 degrees below zero in February, 1905. It will be observed that the climate of Las Vegas is colder in winter than that of either Santa Fe or Fort Stanton.

The data as to winds are not at hand, but the location of Las Vegas with reference to the mountains indicates comparative freedom from winds of great velocity.

ROSWELL.

Roswell, the principal town in the Pecos Valley, is located on the Pecos River, in southeastern New Mexico, at an altitude of 3,570 feet. It is a town of about 7,000 people and is the site of the New Mexico Military Institute.

Roswell and the Pecos Valley generally are celebrated for artesian wells, and this region is one of the finest agricultural and fruit-growing sections of the Southwest.

Being located in a wide valley which stretches far to the north as well as to the south, Roswell is exposed to high winds, and being of comparatively low altitude its summers are hot while the winters are unusually mild, although an occasional norther brings heavy snow and low temperature.

A maximum temperature of 101 degrees is recorded and a minimum of −31. The annual for the year is a little over 59, and the average precipitation is about 16 inches.

Roswell is only 75 miles from Fort Stanton. Its numerous lagoons and streams are the resorts in winter of thousands of ducks, while fishing is good the year round, and, like Carlsbad, it has an excellent winter climate for consumptives. Many invalids spend the winter in the Pecos Valley and during the summer make camping trips to the White Mountain region, near Fort Stanton.

SANTA FE.

Santa Fe, the capital of the Territory and perhaps the oldest town in the Southwest, is situated in the mountainous region of north central New Mexico. Its altitude is 7,013 feet. It is protected on all sides by mountains, and possesses one of the very best high-altitude climates in New Mexico. The climatological data of Santa Fe, furnished me by Mr. C. E. Linney, section director, United States Weather Service, are complete and valuable. They show a very large number of clear and partly cloudy days and an average precipitation of less than 15 inches, average humidity of 45 per cent, and an average hourly wind velocity of 6.9 miles, with the highest hourly velocity of 53 miles, which was recorded in October, 1906.

The percentage of sunshine annually is 76 out of a possible 100. In order that this percentage may be more thoroughly appreciated I may say that Boston has 55 per cent, Buffalo 49, New York 56, Pittsburg 44, Philadelphia and Washington 57, Detroit 52, St. Louis, Jacksonville and Des Moines each 60, Cincinnati 38, while Atlanta, Ga., the highest of which I have secured any record, has but 61.

Santa Fe has a population of about 10,000, and not only is the city itself picturesque and attractive to the tourist and invalid, but the surrounding country abounds in scenic prehistoric and historic attractions. Three railroads enter the city—the Santa Fe System, Denver and Rio Grande, and the Santa Fe Central. A tent-city sanatorium is maintained near the town.

EL PASO, TEX.

El Paso, although located within the Commonwealth of Texas, is situated in that part of the State which is naturally a portion of New Mexico. It is the gateway to New Mexico from all the Gulf States, as well as from California. Its altitude is 3,767 feet, with a climate very much the same as that of Las Cruces. Great numbers of invalids resort there in the winter months.

El Paso is a city of about 50,000 people, and is a convenient and attractive resting place for invalids en route to New Mexico.

ADVICE TO PATIENTS INTENDING TO RESORT TO THE SOUTHWEST.

A word as to the character of cases for which the climate of New Mexico is best suited may not be amiss. This may be better expressed by enumerating those who should not seek it.

First, consumptives should not come to New Mexico without sufficient means to procure the necessaries and even the luxuries of life, chiefly because most of them are not fit to engage in the struggle for a living, and, secondly, because there are many more applicants for work than places. As a rule consumptives need rest, while undue exercise has caused many deaths which have been attributed to altitude.

Patients with advanced valvular heart disease do not do well in high altitudes, and those who, by reason of the great extent of lung tissue involved, or for other reasons, have a low vital capacity, as shown by small chest expansion, would do better to reach a high altitude by gradual stages, or, before coming, to increase their breathing capacity by appropriate chest-expansion exercises; although the earlier the diagnosis is made and the more prompt the resort to appropriate climate the greater the probability of cure. Advanced cases, especially if with no serious complications, frequently do well. I have just discharged a half dozen such cases (apparently cured), which have been under treatment three to seven years, and one of these had also a very heavy albuminuria, which likewise cleared up. A tendency to hemorrhage is not a bar to residence in high altitude; indeed, the statistics of the Fort Stanton Sanatorium show that there is less probability of hemorrhage at 6,000 feet than at sea level, and many cases of laryngeal tuberculosis recover completely. A consumptive coming west should be referred to some physician in the locality in which he intends stopping in order that he may be properly advised as to the manner of life he should adopt in order to receive the greatest possible benefits from the climate.

SUMMARY.

To summarize, New Mexico as a resort for consumptives has the following advantages:

(*a*) Altitude.

(*b*) Low relative humidity.

(*c*) Large percentage of sunshine, advantageously distributed as to season.
(*d*) Cold or cool nights.
(*e*) Moderate wind movement.
(*f*) Small precipitation.
(*g*) Rarity of fogs.
(*h*) Pure air.
(*i*) Well drained soil with low percentage of soil moisture.

In conclusion I quote from "Climatology of the United States," Bulletin 2 of the Department of Agriculture, by Professor Henry:

In general the climate (of New Mexico) is such as to permit outdoor work and outdoor life the year round under conditions that are comparatively comfortable and pleasant. The wind storms that prevail during February, March, and April are the only serious drawbacks to the climate, which otherwise presents comfortable and healthy conditions the year round.

Acknowledgment is hereby rendered to Mr. C. E. Linney, section director, United States Weather Bureau, Santa Fe, N. Mex., for valuable meteorological tables used in this report; to Prof. John Weinzirl, of Albuquerque, Mr. John R. De Mier, of Alamogordo, and Messrs. McLenathen and Tracy, of Carlsbad, for information regarding their respective localities; also to Col. Max Frost, of Santa Fe, N. Mex., for valuable assistance and information.

Meteorological data for Santa Fe, N. Mex.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Average number of days:													
Clear	18	14	16	14	15	16	11	11	17	20	19	18	189
Partly cloudy	9	9	11	12	13	12	16	16	10	8	8	9	133
Cloudy	4	5	4	4	3	2	4	4	3	3	3	4	43
With precipitation	5	7	6	5	7	6	13	9	7	5	4	5	79
Average monthly precipitation for 34 years	0.60	0.76	0.74	0.79	1.13	1.06	2.68	2.38	1.64	1.05	0.77	0.71	14.31
Average monthly snowfall	4.7	6.6	4.5	3.1	0.2	0	0	0	0	0.4	2.8	6.1	28.4
Average monthly relative humidity	54	54	42	34	36	33	46	47	46	46	48	54	45
Mean maximum temperature	39	43	54	60	70	79	82	80	74	63	50	43	61
Mean minimum temperature	19	22	29	34	43	52	57	56	48	38	27	21	3
Mean temperature for 34 years	29	33	40	47	56	66	69	68	61	50	39	31	49
Highest monthly temperature	76	75	82	84	86	92	96	97	90	85	77	65	[a] 97
Lowest monthly temperature	−13	−11	0	11	24	33	43	40	27	13	−11	−13	[b] −13
Average hourly wind velocity	6.3	7.2	7.9	8.3	7.9	7.2	6.5	5.9	5.8	6.2	6.3	6.3	6.9
Highest velocity	38	46	50	44	51	48	45	40	46	53	51	40	[c] 53
Percentage of sunshine	74	73	75	78	76	79	69	72	76	80	78	76	76
Prevailing wind direction	NE.	NE.	SW.	SW.	SW.	SW.	SE.	SE.	SE.	SE.	SE.	NE.	SE.

[a] On August 9, 1878.
[b] On January 21, 1883, and December 25, 1879.
[c] In October, 1896.

Average number of days each year with minimum temperature below 32°	129
Average number of days each year with maximum temperature above 90°	2
Average date of last killing frost in spring	Apr. 15
Average date of first killing frost in fall	Oct. 19
Average number of days with fog (annual)	2
Average number of days with hail (annual)	4
Average number of days with snow (annual	27
Average number of days with thunderstorms (annual)	25

Meteorological data for Las Vegas, N. Mex.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Average number of days:													
Clear	23	17	21	20	17	15	15	17	18	21	20	23	227
Partly cloudy	7	8	8	8	13	12	14	13	10	8	8	6	115
Cloudy	1	3	2	2	1	3	2	1	2	2	2	2	23
With precipitation	2	3	3	4	8	9	11	10	8	3	3	3	67
Average monthly precipitation for 19 years	0.46	1.00	0.67	0.89	2.11	1.86	3.99	2.94	2.52	1.04	0.85	0.66	18.99
Average monthly relative humidity	48	46	43	42	51	52	56	56	53	52	51	50	50
Mean maximum temperature	47	48	57	65	73	81	83	83	74	64	56	47	65
Mean minimum temperature	19	21	28	34	43	50	55	54	47	36	27	19	36
Mean temperature for 19 years	33	34	41	50	58	66	69	68	61	50	41	33	50
Highest monthly maximum	69	71	76	82	90	98	96	97	93	82	76	70	[a]98
Lowest monthly minimum	−9	−31	−11	12	26	34	40	44	32	15	2	−9	[b]−31

[a] In 1902. [b] In 1905.

Meteorological data for Fort Stanton, N. Mex.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Average number of days:													
Clear	16	14	13	15	16	13	10	11	13	20	16	16	173
Partly cloudy	11	10	13	12	12	13	15	15	11	7	9	12	140
Cloudy	4	4	5	3	3	4	6	5	6	4	5	3	52
With precipitation	4	5	5	3	4	7	11	11	8	4	4	4	70
Average monthly precipitation for 28 years	0.64	0.72	0.86	0.64	0.89	1.76	3.16	3.44	2.30	1.45	0.67	0.88	17.41
Average monthly relative humidity for 7 years	60	55	47	37	34	41	55	57	59	56	59	61	52
Mean maximum temperature for 7 years	47	52	56	65	72	81	83	80	74	66	55	49	65
Mean minimum temperature for 7 years	21	27	29	36	44	50	56	54	48	37	28	24	38
Mean temperature for 28 years	35	38	44	51	60	67	69	67	61	52	42	36	52
Highest monthly temperature	69	76	73	78	85	94	95	92	86	80	72	68	95
Lowest monthly temperature	−6	−3	6	14	29	34	46	44	31	22	7	−18	[a]−18
Average hourly wind velocity	8.0	9.2	8.4	8.2	7.5	6.0	4.5	4.7	4.4	5.2	6.1	6.8	6.6
Highest velocity	51	54	60	60	63	42	44	36	30	42	44	50	[b]63
Monthly average snowfall	1.6	2.1	8.2	Tr.	0	0	0	0	0	Tr.	4.2	6.2	22.3

[a] December 22, 1887. [b] In May.

Average date of last killing frost in spring ..... May 6
Average date of first killing frost in autumn ..... Oct. 5

Meteorological data for Las Cruces, N. Mex.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual.
Average number of days:													
Clear	19	17	19	20	20	20	14	14	18	22	22	20	225
Partly cloudy	7	7	8	7	9	8	10	12	7	6	4	6	91
Cloudy	5	5	4	3	2	2	7	4	5	3	4	5	49
Average monthly precipitation	0.32	0.50	0.28	0.17	0.25	0.58	1.84	1.71	1.45	0.76	0.57	0.44	8.82
Average monthly relative humidity.	52	52	46	42	40	42	54	58	59	56	55	53	51
Mean maximum temperature	58	61	69	77	85	94	93	92	87	77	67	57	76
Mean minimum temperature	23	26	32	39	46	56	62	61	54	41	29	23	41
Mean temperature	42	46	53	61	70	78	80	79	73	62	49	42	51
Highest monthly temperature	70	76	82	88	95	102	102	99	96	88	78	71	.....
Lowest monthly temperature	10	12	18	28	34	44	54	54	42	28	18	12	.....
Average monthly wind velocity	5.8	7.2	8.8	8.7	8.0	7.0	6.4	5.7	5.8	5.7	5.5	5.6	6.7

Report from Gulf Quarantine, Miss.—Beriberi on bark Infatigable from Para.

Passed Assistant Surgeon Wille reports, July 3: The Norwegian bark *Infatigable*, from Para, Brazil, arrived at this station on the 23d ultimo, with 4 cases convalescent beriberi on board.

The vessel was granted pratique for Pascagoula without other detention than the five days required by the regulations.

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES AND CITIES OF THE UNITED STATES—UNTABULATED.

CALIFORNIA.—Month of May, 1907. Estimated population, 2,001,193. Total number of deaths reported to the State board of health, 2,540, corresponding to an annual death rate of 14.9 per 1,000 population. Deaths from contagious diseases were as follows: Diphtheria 19, enteric fever 27, measles 28, scarlet fever 16, whooping cough 15, and 378 from tuberculosis.

FLORIDA.—Reports to the State board of health for the week ended June 29, 1907, show as follows: Enteric fever—*Jacksonville* and *Mayport*; 5 cases; *Plant City* and *Tampa*, 8 cases; *Tallahassee*, 1 case. Malarial fever—*Fernandina*, 1 case. Tuberculosis—*Jacksonville*, 1 case.

ILLINOIS—*Quincy*.—Month of June, 1907. Estimated population, 43,000. Total number of deaths, 53, including diphtheria 4, and 6 from tuberculosis. Cases of contageous diseases reported: Diphtheria 39, measles 13, scarlet fever 1, and enteric fever 3.

INDIANA—*Anderson*.—Month of June, 1907. Estimated population, 25,000. Total number of deaths, 25, including 6 from tuberculosis. Cases: Diphtheria 1, enteric fever 1, measles 27, and scarlet fever 1.